

Lesson Plan - (2025-26) 1st sem M.Sc.-(Maths) Real Analysis-I

Unit - I

18-08-25 → 21-08-25 : Definition and existence of Riemann - Stieltjes integral and their properties

25-08-25 → 28-08-25 : Integration and differentiation and related Theorems

01-09-25 → 04-09-25 : Fundamental Theorem of Integral Calculus
Integration of vector valued functions

08-09-25 → 11-09-25 : Vector valued functions properties

15-09-25 → 19-09-25 : Rectifiable curves
(Unit - II)

22-09-25 → 25-09-25 : Sequence and series of functions. Pointwise and uniform convergence

29-09-25 → 02-10-25 : Cauchy's criterion for uniform convergence
Dini's Theorem, uniform convergence and continuity

06-10-25 → 09-10-25 : Uniform convergence and Riemann-Stieltjes
Uniform convergence and differentiation

13-10-25 → 16-10-25 : Convergence and uniform convergence of series of functions, integration and differentiation of series of functions

27-10-25 → 30-10-25 : Weierstrass M-test and Approximation Theorem. Existence of a nowhere differentiable function

Unit - III

03-11-25 → 06-11-25 : Functions of Linear Transformation Space
of L.T. from $\mathbb{R}^n \rightarrow \mathbb{R}^m$ on a metric sp
Open sets

10-11-25 → 13-11-25 : Continuity, derivative in an open set
of $\mathbb{R}^n$, Chain rule

17-11-25 → 20-11-25 : Partial Derivatives, continuously differentiable mappings, the contraction Principle

24-11-25 → 27-11-25 : Inverse function Theorem, Implicit function Theorem

Unit - IV

01-12-25 → 04-12-25 : Fourier series. N.D.S condition for convergence of Fourier series
Summability of series

08-12-25 → 11-12-25 : L^2 Theory of F-series, Bessel's, Parseval's inequality. Riesz Fisher Theorem
Convergence of F series

15-12-25 → 18-12-25 : Riemann-Lebesgue Theorem, Orthonormal expansion in $L^2[a, b]$. Bessel's inequality for generalized Fourier series

22-12-25 → : Revision

Submitted by :
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